

# Mill Creek Watershed

## Conservation Opportunity Area



**Mill Creek is a tributary of the Cumberland River** and flows approximately 27 miles through Williamson and Davidson Counties. Given its location within Metro-Davidson County (Nashville), much of the watershed surrounding Mill Creek is urbanized. Mill Creek and its tributaries are the only known localities in the world that harbor the Nashville Crayfish (*Orconectes shoupi*). This species is listed as endangered by both the U.S. Fish and Wildlife Service and TWRA. The Nashville crayfish occupies free-flowing waters containing large slab rocks on top of the bedrock substrate within just two streams in Davidson and Williamson Counties.

Since the occurrence of this species is in a highly developed metropolitan area, threats to this crayfish and other species in the watershed include pollutants contained in storm water runoff, sedimentation from construction located along the streams and within the watershed, and stream modifications such as dry bed retention dams. This species is typically not found in turbid waters within the creek, therefore erosion associated with development in the watershed poses a major threat.

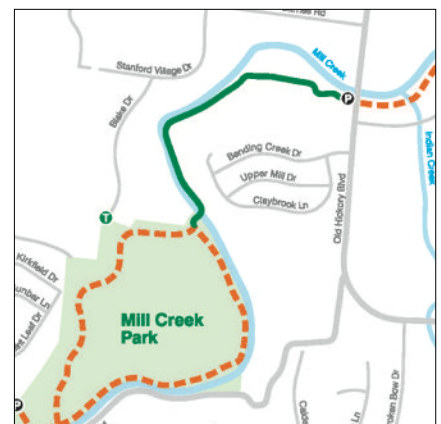
Given the amount of development that has previously occurred within the watershed, it is imperative to implement habitat protection measures to ensure the remaining aquatic habitat is not destroyed or lost. Bioaccumulation of contaminants is a concern for the crayfish and other aquatic species in the watershed.

### Public Lands within the COA

Ellington Agricultural Center, Mill Creek Bottoms Greenway, Radnor Lake State Park/State Natural Area



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Top to bottom: Nashville Crayfish - Carl Williams, TWRA; Mapped section of the Mill Creek Greenway in Nashville - TN.gov/next page: Upland Chorus Frog - Matt Niemiller, TWRA

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## Partnerships

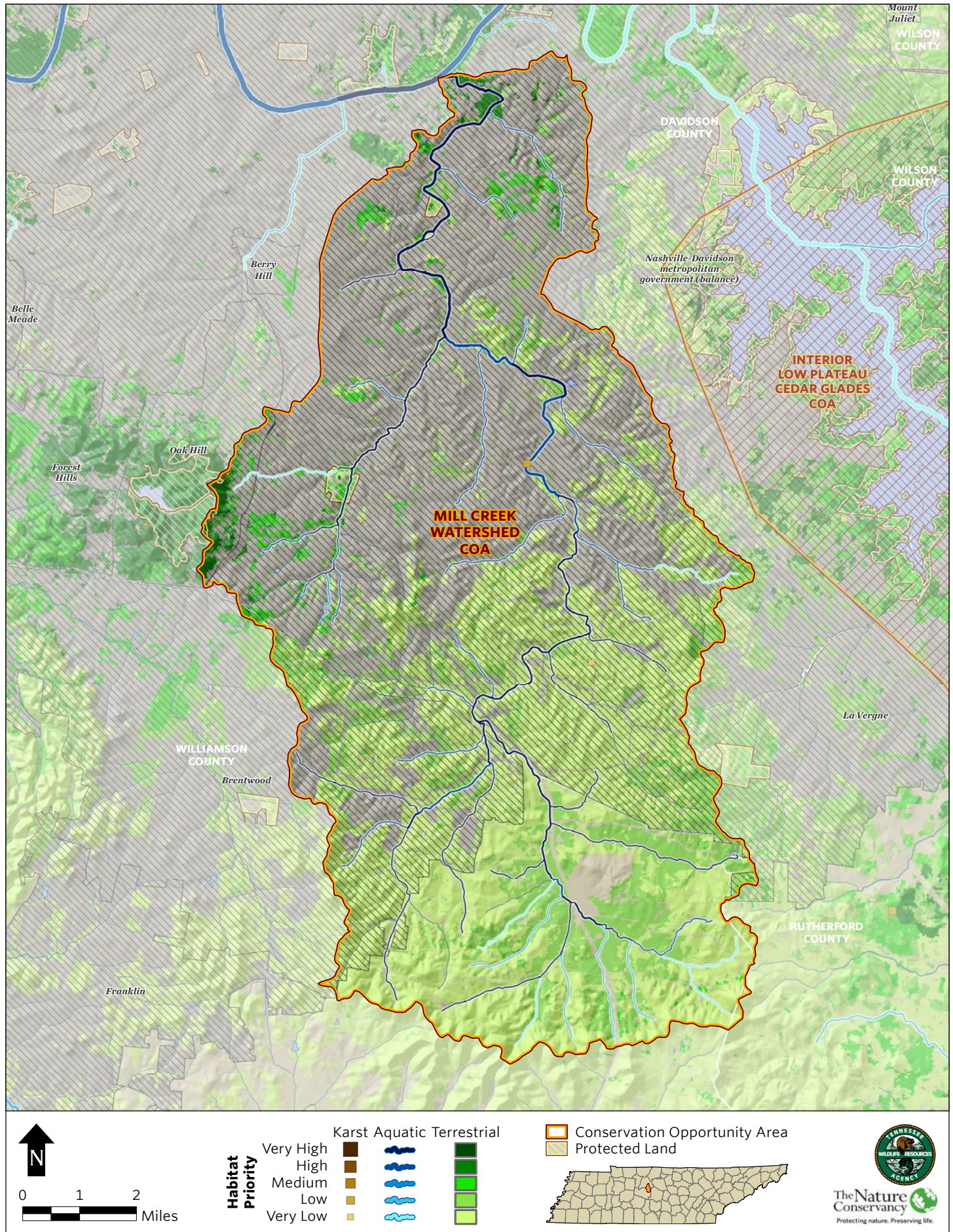
To address these threats to Mill Creek and the Nashville Crayfish, TWRA will develop and expand new programs and foster partnerships with the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Tennessee Dept. of Environment and Conservation, Tennessee Valley Authority, Walden's Puddle, watershed associations, and metro Davidson County government. The Agency will partner with zoning and planning committees to help minimize the impact of planned developments through improved zoning ordinances.



Desired Change	Units
+ Restore instream flows and physical structure to channelized or impounded streams.	miles
✓ Develop a monitoring program to measure bioaccumulation of contaminants in target species.	projects
+ Expand the network of trained volunteers to assist in monitoring the Nashville Crayfish.	number
✓ Develop a multi-agency network of professional aquatic biologists to assist the Tennessee Division of Water Resources (TDEC) in gathering documentation and supporting evidence to enforce existing water quality laws.	number
— Decrease the negative effects of development on GCN species and habitats by encouraging municipal and county governments to limit or regulate development within critical units of aquatic, subterranean, and terrestrial habitats.	plans
+ Improve conservation outcomes for GCN species and habitats through participation in environmental planning and permitting.	reviews

To learn more about the Mill Creek Watershed Conservation Opportunity Area, please contact: Josh Campbell, Wildlife Diversity Coordinator, Region 2 (615) 781-6626









MILL CREEK WATERSHED COA GCN SPECIES	
Taxa Group	Scientific & Common names
Bat	Myotis grisescens (Gray Bat)
Bird	Accipiter striatus (Sharp-shinned Hawk)
Bird	Ammodramus leconteii (LeConte's Sparrow)
Bird	Anas rubripes (American Black Duck)
Bird	Aquila chrysaetos (Golden Eagle)
Bird	Asio flammeus (Short-eared Owl)
Bird	Bartramia longicauda (Upland Sandpiper)
Bird	Botaurus lentiginosus (American Bittern)
Bird	Calidris mauri (Western Sandpiper)
Bird	Calidris pusilla (Semipalmated Sandpiper)
Bird	Caprimulgus carolinensis (Chuck-will's-widow)
Bird	Caprimulgus vociferus (Whip-poor-will)
Bird	Cardellina canadensis (Canada Warbler)
Bird	Chaetura pelagica (Chimney Swift)
Bird	Chordeiles minor (Common Nighthawk)
Bird	Circus cyaneus (Northern Harrier)
Bird	Cistothorus platensis (Sedge Wren)
Bird	Colinus virginianus (Northern Bobwhite)
Bird	Egretta caerulea (Little Blue Heron)
Bird	Empidonax minimus (Least Flycatcher)
Bird	Empidonax traillii (Willow Flycatcher)
Bird	Euphagus carolinus (Rusty Blackbird)
Bird	Falco peregrinus (Peregrine Falcon)
Bird	Geothlypis Formosa (Kentucky Warbler)
Bird	Grus americana (Whooping Crane)
Bird	Haliaeetus leucocephalus (Bald Eagle)
Bird	Helmitheros vermivorum (Worm-eating Warbler)
Bird	Hylocichla mustelina (Wood Thrush)
Bird	Icteria virens (Yellow-breasted Chat)
Bird	Icterus spurius (Orchard Oriole)
Bird	Ictinia mississippiensis (Mississippi Kite)
Bird	Lanius ludovicianus (Loggerhead Shrike)
Bird	Limnothlypis swainsonii (Swainson's Warbler)
Bird	Melanerpes erythrocephalus (Red-headed Woodpecker)
Bird	Nycticorax nycticorax (Black-crowned Night-heron)
Bird	Parkesia motacilla (Louisiana Waterthrush)
Bird	Protonotaria citrea (Prothonotary Warbler)
Bird	Riparia riparia (Bank Swallow)
Bird	Scolopax minor (American Woodcock)
Bird	Setophaga cerulea (Cerulean Warbler)
Bird	Setophaga discolor (Prairie Warbler)
Bird	Setophaga fusca (Blackburnian Warbler)
Bird	Sturnella magna (Eastern Meadowlark)
Bird	Thryomanes bewickii (Bewick's Wren)
Bird	Tryngites subruficollis (Buff-breasted Sandpiper)
Bird	Tyto alba (Barn Owl)
Bird	Vermivora chrysoptera (Golden-winged Warbler)
Bird	Vermivora cyanoptera (Blue-winged Warbler)
Crustacean	Orconectes shoupi (Nashville Crayfish)
Fish	Etheostoma luteovinctum (Redband Darter)
Fish	Etheostoma striatulum (Striated Darter)
Plant	Acalypha deamii (Deam's Copperleaf)
Plant	Astragalus tennesseensis (Tennessee Milk-vetch)
Plant	Boechera shortii (Short's Rock-cress)

MILL CREEK WATERSHED COA GCN SPECIES	
Taxa Group	Scientific & Common names
Plant	Castanea dentata (American Chestnut)
Plant	Echinacea tennesseensis (Tennessee Coneflower)
Plant	Juglans cinerea (Butternut)
Plant	Paysonia densipila (Duck River Bladderpod)
Plant	Phemeranthus calcaricus (Limestone Fame-flower)
Plant	Phlox bifida ssp. stellaria (Glade Cleft Phlox)
Plant	Stellaria fontinalis (Water Stitchwort)
Plant	Zanthoxylum americanum (Northern Prickly-ash)
Subterranean - Crustacean	Caecidotea bicrenata ((a cave obligate isopod))
Subterranean - Crustacean	Stygobromus exilis (Central Kentucky Cave Obligate)
Subterranean - Flatworm	Sphalloplana buchanani ((a cave obligate planarian))
Subterranean - Flatworm	Sphalloplana percoeca ((a cave obligate planarian))
Subterranean - Insect	Pseudosinella hirsuta (Hirsute Cave Springtail)
Subterranean - Millipede	Scoterpes musicarustica ((a cave obligate millipede))

MILL CREEK WATERSHED COA HABITATS (TN)	
Terrestrial Habitat Type	Total acres of very high, high, and medium ranked habitat
<b>Natural habitats</b>	
Southern Interior Low Plateau Dry-Mesic Oak Forest	1289
South-Central Interior Mesophytic Forest	637
Nashville Basin Limestone Glade and Woodland	140
South-Central Interior Small Stream and Riparian	54
South-Central Interior Large Floodplain	9
<b>Semi-natural habitats</b>	
Pasture	1598
Old Field / Successional	781
Cropland	128
Aquatic Habitat Type	Total stream miles of very high, high, and medium ranked habitat
Headwaters and Streams	74
Small River	13